

		Lecture Plan					
Name of the College: Government College of Arts, Science and Commerce. Sanquelim - Goa							
Name of Faculty: Shritesh Mhapsekar				Subject: VAC			
Paper code: GEO-203, Introduction to Mining Geology				Program: BSc		Division:	
Academic year: 2024-25				Semester: IV		Total Lectures: 45	
Course Objectives: 1. Explain the types and processes involved in the mining industry. CL2 2. Discuss laws governing the mining industry. CL2 3. Describe environmental concerns related to mining. CL2 4. Demonstrate preparation of mine development plan, Environmental Management Plan and Key Plan. CL2							
Course Outcome: 1. Explain the different processes related to the mining industry. CL3 2. Evaluate mineral resources. CL3 3. Practice sustainable mining methods. CL3 4. Interpret lithologs and cross-sections based on borehole data. CL4							
Student Learning Outcome:							
Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
December, 2024	December 9, 2024	December 15, 2024	3	Mining: Introduction to Mining			1. Arogyaswamy, R. N. P. (1973). Courses in Mining Geology. III

				Mining methods (Surface)			Edition, Oxford and IBH publication Co. 2. Babu S.K. and Sinha D. K. Practical Manual of Exploration and Prospecting, CBS Publishers and Engineers. 3. McKinstry, H. E. (1948). Mining Geology, Prentice Hill Inc.
	December 16, 2024	December 22, 2024	3	Mining methods (Surface) Mining methods (Underground)			
				Mining methods (Underground)			
January, 2025	December 30, 2024	January 5, 2025	3	Overview of the Mining Industry (Exploration stage, Planning stage, Mining stage, Ore processing, Exports, Environmental management)			
				Overview of the Mining Industry (Exploration stage, Planning stage, Mining stage, Ore processing, Exports, Environmental management)			
				Role of a geologist in the mining industry			
	January 6, 2025	January 12, 2025	3	Case study: Mining Scenario in Goa			
				Mineral exploration (G4, G3, G2 and G1)			

			Mineral exploration (G4, G3, G2 and G1)		
	January 13, 2025	January 19, 2025	3	Geological mapping	
				Types of drilling, drilling equipment and accessories	
				Types of drilling, drilling equipment and accessories	
	January 20, 2025	January 26, 2025	3	Sampling techniques	
				borehole logging, core, sludge	
				Mineral resources and reserves, Types of mineral resources	
	January 27, 2025	February 2, 2025	3	Categorization of reserves based on UNFC	
				Categorization of reserves based on UNFC	
				Categorization of reserves based on UNFC	
February, 2025	February 3, 2025	February 9, 2025	3	Estimation of ore reserve	
				Estimation of ore reserve	
				Grades of Ore: mine cut-off, mill cut-off, breakeven grades	

	February 10, 2025	February 16, 2025	3			
				Offshore Areas Minerals Concession Rules 2006, Mineral Auction Rules 2015,		
				MCDR 2017, MCR 2016		
	February 17, 2025	February 23, 2025	3	Mineral (Evidence of Mineral Content) Rules 2015		
				Manual for preparation of Mining plan, NMET Rules		
				Regulatory Bodies and their role- National Mineral Exploration Trust (NMET),		
	February 24, 2025	March 2, 2025	3	Ministry of Earth Sciences (MOES), Ministry of Environment & Forest (MoEF)		
				District Mineral Foundation (DMFs), Indian Bureau of Mines (IBM),		
				Central Pollution Control Board (CPCB), Directorate of Mine (DMG - Goa		
	March, 2025	March 3, 2025	3	Mine Planning		
		March 9, 2025		Mine Planning		

				Mining machinery					
	March 10, 2025	March 16, 2025	3	Mining below water table and mine drainage					
				quality control					
				Mineral beneficiation (dry, wet)					
	March 17, 2025	March 23, 2025	3	Mineral beneficiation (dry, wet)					
				Environmental impact due to mining					
				Environmental impact due to mining					
	March 24, 2025	March 30, 2025	3	Environmental Impact Assessment (EIA)					
				Environmental Impact Assessment (EIA)					
				Environmental Management Plan (EMP)					
	April, 2025	March 31, 2025	April 6, 2025	3	Utilization and conservation of mineral resources				
					Utilization and conservation of mineral resources				
Case studies									
April 7, 2025		April 13, 2025	3	Revision					
				Revision					
				Revision					
Assessment Rubrics	Component	Max Marks							
	ISA 1	7.5							
	ISA 2	7.5							

Practical	25
Project	
Semester End Exam	